

CLAIMS

What is claimed is:

1. A method of inhibiting delivery of atrial therapy, comprising:
developing atrial intervals and ventricular intervals from sensed atrial and ventricular events, respectively;
computing a representative atrial interval rate and a representative ventricular interval rate using a predetermined number of the atrial and ventricular intervals, respectively;
calculating an average atrial rate and an average ventricular rate using the representative atrial and ventricular interval rates, respectively; and
inhibiting delivery of atrial therapy if the average atrial rate fails to exceed the average ventricular rate by at least a predetermined factor.
2. The method of claim 1, wherein calculating the average atrial and ventricular rates comprises calculating the average atrial and ventricular rates on a beat per minute basis using the representative atrial and ventricular interval rates.
3. The method of claim 1, wherein the predetermined number of the atrial and ventricular intervals is between 4 and 60 of the most recent atrial and ventricular intervals, respectively.
4. The method of claim 1, wherein the predetermined number of the atrial and ventricular intervals is about 10, respectively.
5. The method of claim 1, wherein the predetermined factor is at least 105 percent.

6. The method of claim 1, wherein:
calculating the average atrial and ventricular rates further comprises
calculating the average atrial and ventricular rates on a beat per minute basis using the
representative atrial and ventricular interval rates; and
5 the predetermined factor is between 10 and 30 beats per minute.

7. The method of claim 1, wherein:
calculating the average atrial and ventricular rates further comprises
calculating the average atrial and ventricular rates on a beat per minute basis using the
10 representative atrial and ventricular interval rates; and
the predetermined factor is about 20 beats per minute.

8. The method of claim 1, wherein the representative atrial and ventricular
interval rates are computed by computing an average of the predetermined number of
15 the atrial and ventricular intervals, respectively.

9. The method of claim 1, wherein the representative atrial and ventricular
interval rates are computed by computing a median of the predetermined number of the
atrial and ventricular intervals, respectively.

10. The method of claim 1, wherein the representative atrial and ventricular
interval rates are computed by computing a mean of the predetermined number of the
atrial and ventricular intervals, respectively.

11. The method of claim 1, further comprising enabling delivery of atrial
25 therapy if the average atrial rate exceeds the average ventricular rate by at least the
predetermined factor.

12. A method of inhibiting delivery of atrial therapy, comprising:
developing atrial intervals and ventricular intervals from sensed atrial and ventricular events, respectively;

calculating an average atrial rate and an average ventricular rate
5 developed from a predetermined number of the atrial and ventricular intervals, respectively; and

inhibiting delivery of atrial therapy if the average atrial rate fails to exceed the average ventricular rate by at least a predetermined factor.

10 13. The method of claim 12, wherein calculating the average atrial and ventricular rates further comprises calculating the average atrial and ventricular rates on a beat per minute basis using an average of the predetermined number of the atrial and ventricular intervals, respectively.

15 14. The method of claim 12, wherein calculating the average atrial and ventricular rates further comprises calculating the average atrial and ventricular rates on a beat per minute basis using a median of the predetermined number of the atrial and ventricular intervals, respectively.

20 15. The method of claim 12, wherein calculating the average atrial and ventricular rates further comprises calculating the average atrial and ventricular rates on a beat per minute basis using a mean of the predetermined number of the atrial and ventricular intervals, respectively.

25 16. The method of claim 12, wherein calculating the average atrial and ventricular rates comprises calculating the average atrial and ventricular rates using a number n of the atrial intervals and a number m of the ventricular intervals developed during a predetermined time period.

17. The method of claim 12, wherein calculating the average atrial and ventricular rates comprises calculating the average atrial and ventricular rates using a first time period during which a number n of the atrial intervals is developed and a second time period during which a number m of the ventricular intervals is developed.

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18. The method of claim 12, wherein the predetermined number of the atrial and ventricular intervals is between 4 and 60 of the most recent atrial and ventricular intervals, respectively.

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19. The method of claim 12, wherein the predetermined number of the atrial and ventricular intervals is about 10, respectively.

20. The method of claim 12, wherein the predetermined factor is at least 105 percent.

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21. The method of claim 12, wherein:
calculating the average atrial and ventricular rates further comprises calculating the average atrial and ventricular rates on a beat per minute basis using an average of the predetermined number of the atrial and ventricular intervals; and
the predetermined factor is between 10 and 30 beats per minute.

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22. The method of claim 12, wherein:
calculating the average atrial and ventricular rates further comprises calculating the average atrial and ventricular rates on a beat per minute basis using an average of the predetermined number of the atrial and ventricular intervals; and
the predetermined factor is about 20 beats per minute.

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23. The method of claim 12, further comprising enabling delivery of atrial therapy if the average atrial rate exceeds the average ventricular rate by at least the predetermined factor.

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24. A body implantable system, comprising:

at least one lead comprising atrial and ventricular electrodes;

a detector, coupled to the at least one lead, that senses atrial events and

ventricular events; and

a control circuit coupled to the detector, the control circuit calculating an average atrial rate and an average ventricular rate developed from a predetermined number of the atrial and ventricular intervals, respectively, the control circuit inhibiting delivery of atrial therapy if the average atrial rate fails to exceed the average ventricular rate by at least a predetermined factor.

25. The system of claim 24, wherein the control circuit calculates the average atrial and ventricular rates on a beat per minute basis using an average of the predetermined number of the atrial and ventricular intervals, respectively.

26. The system of claim 24, wherein the control circuit calculates the average atrial and ventricular rates on a beat per minute basis using a median of the predetermined number of the atrial and ventricular intervals, respectively.

27. The system of claim 24, wherein the control circuit calculates the average atrial and ventricular rates on a beat per minute basis using a mean of the predetermined number of the atrial and ventricular intervals, respectively.

28. The system of claim 24, wherein predetermined number of the atrial and ventricular intervals is between 4 and 60 of the most recent atrial and ventricular intervals, respectively.

29. The system of claim 24, wherein the predetermined number of the atrial and ventricular intervals is about 10, respectively.

30. The system of claim 24, wherein the predetermined factor is at least 105 percent.

31. The system of claim 24, wherein the control circuit calculates the average
5 atrial and ventricular rates on a beat per minute basis using an average of the
predetermined number of the atrial and ventricular intervals, and the predetermined
factor is between 10 and 30 beats per minute.

32. The system of claim 24, wherein the control circuit calculates the average
10 atrial and ventricular rates on a beat per minute basis using an average of the
predetermined number of the atrial and ventricular intervals, and the predetermined
factor is about 20 beats per minute.

33. The system of claim 24, wherein the control circuit enables delivery of
15 atrial therapy if the average atrial rate exceeds the average ventricular rate by at least
the predetermined factor.